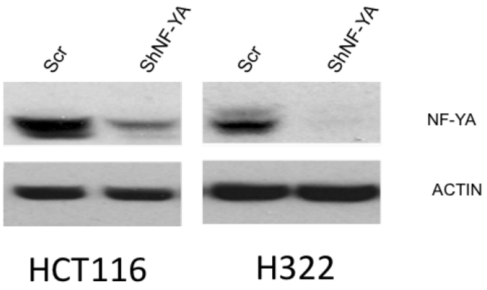
NF-Y activates genes of metabolic pathways altered in cancer cells

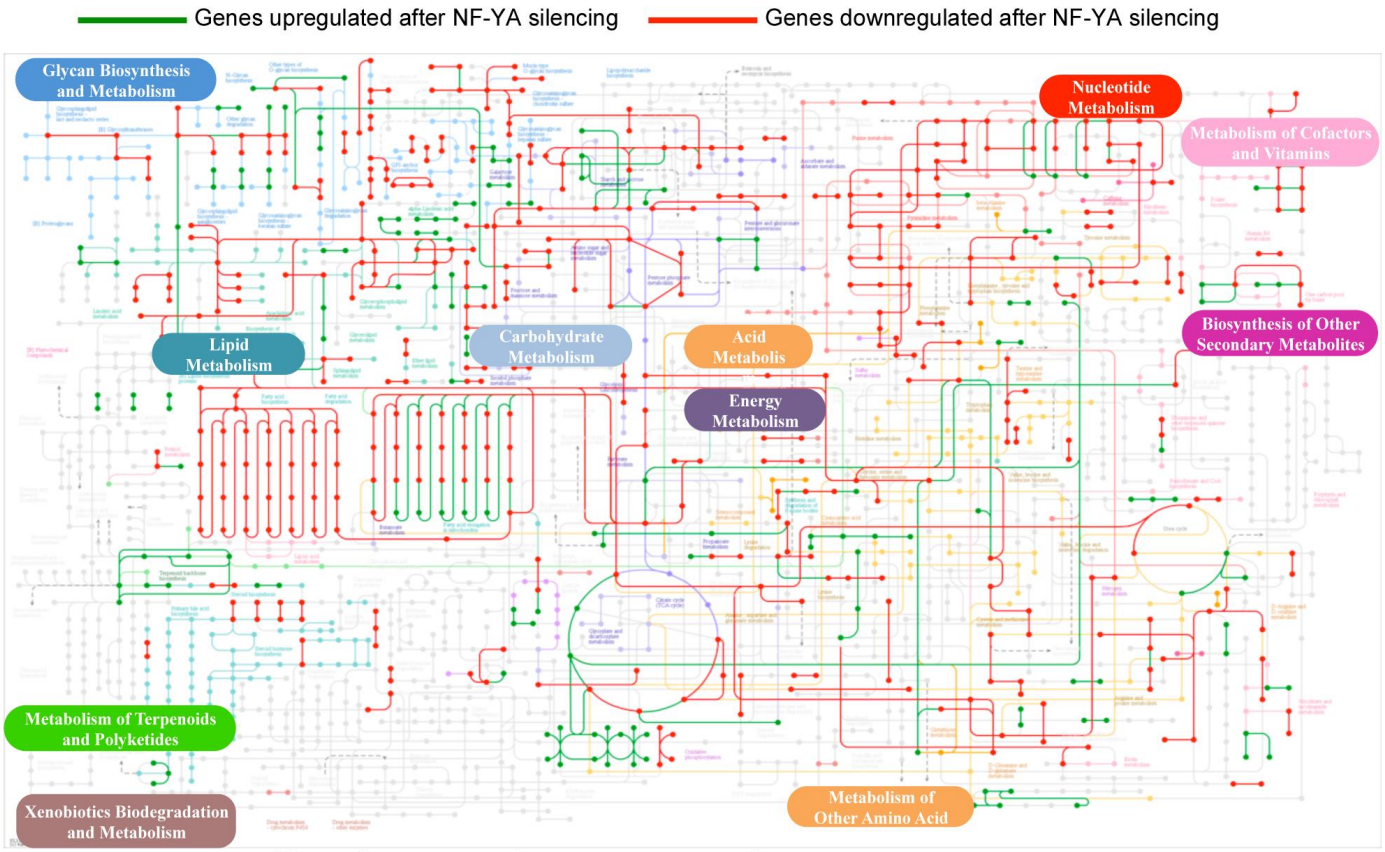
Supplementary Material

Fig.S1 Inactivation of NF-YA in HCT116 and H322 cell lines.

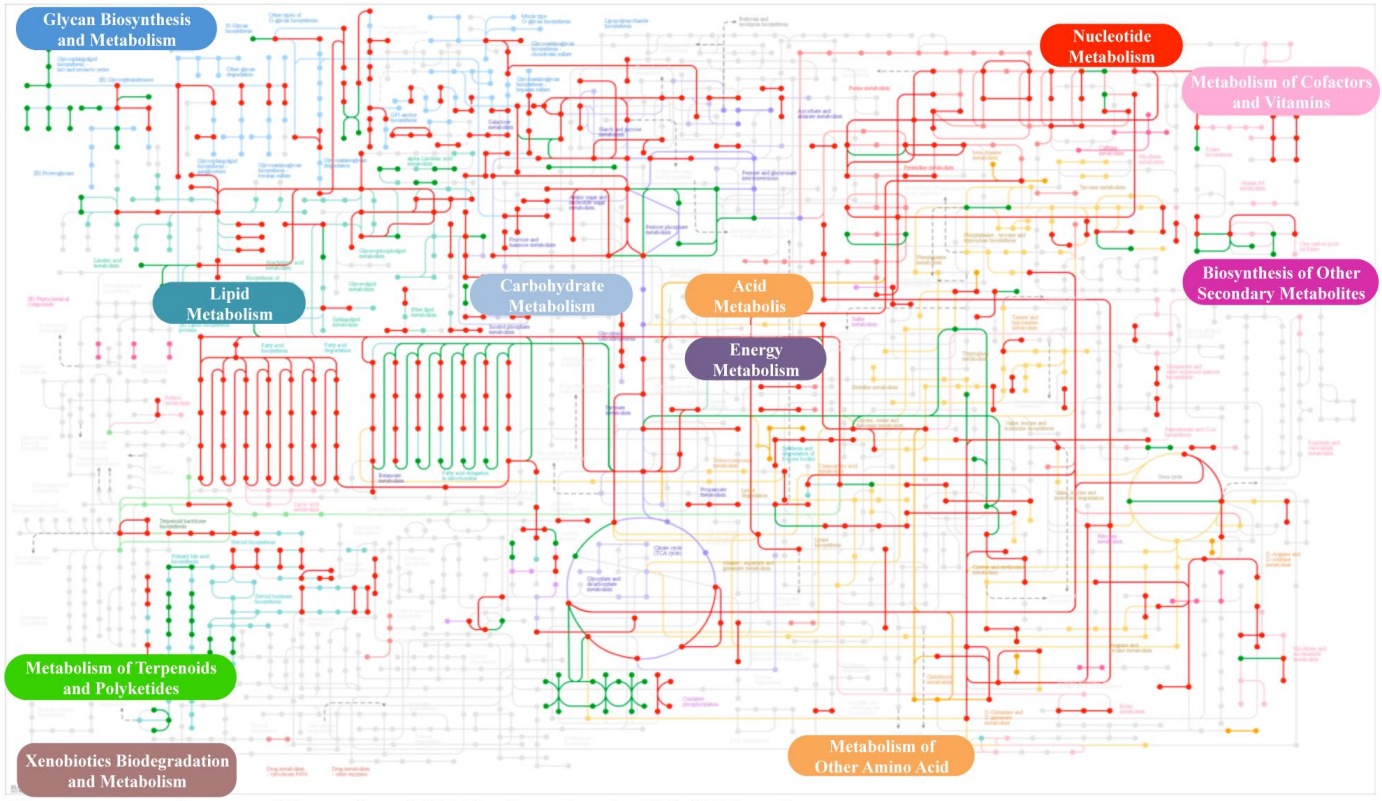


Cells were transduced with shSC or shNF-YA viruses and collected 72 hrs after treatment.

Fig.S3 Global Metabolic maps of genes deregulated after NF-YA inactivation in HCT116 and H322 cells



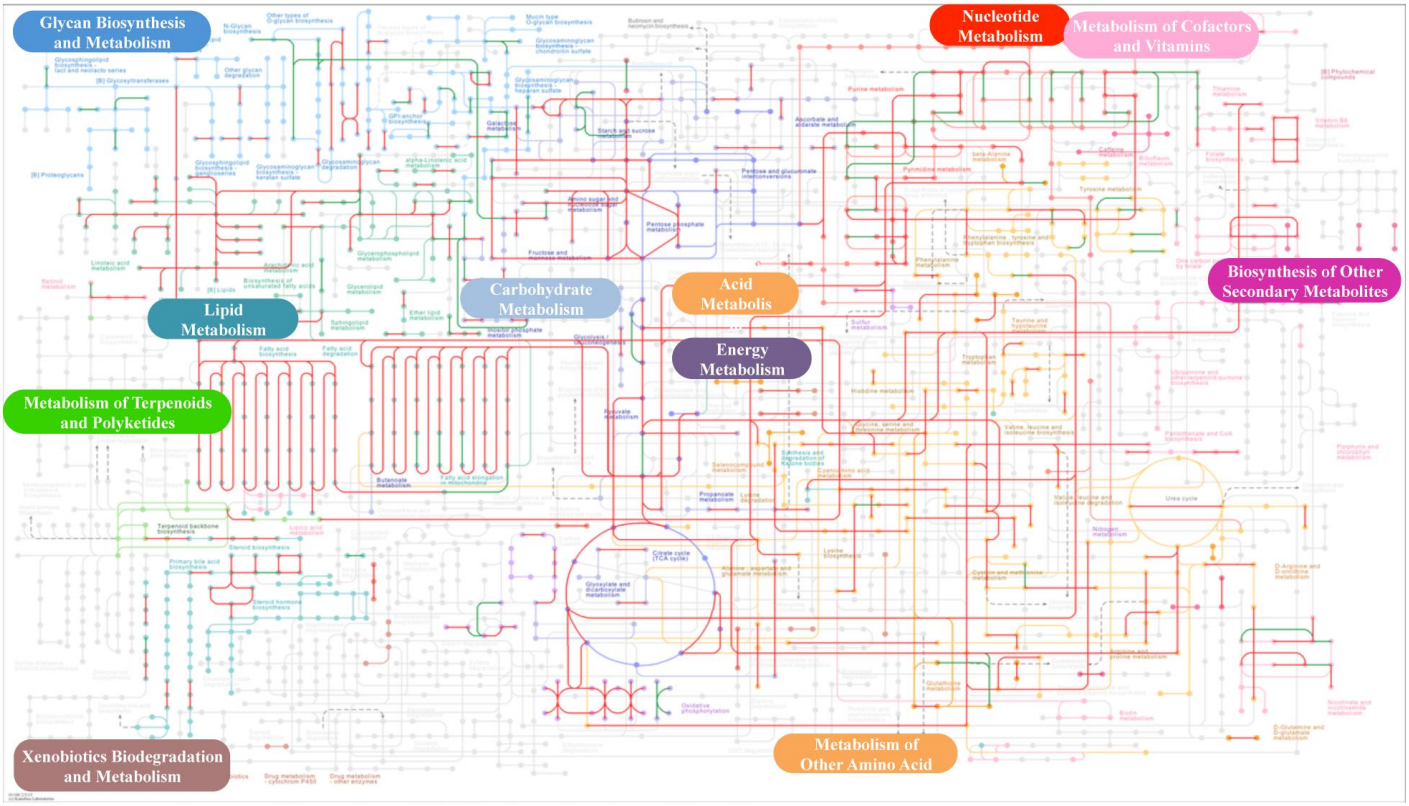
Gene expression profiling after NF-YA silencing in H322 cells



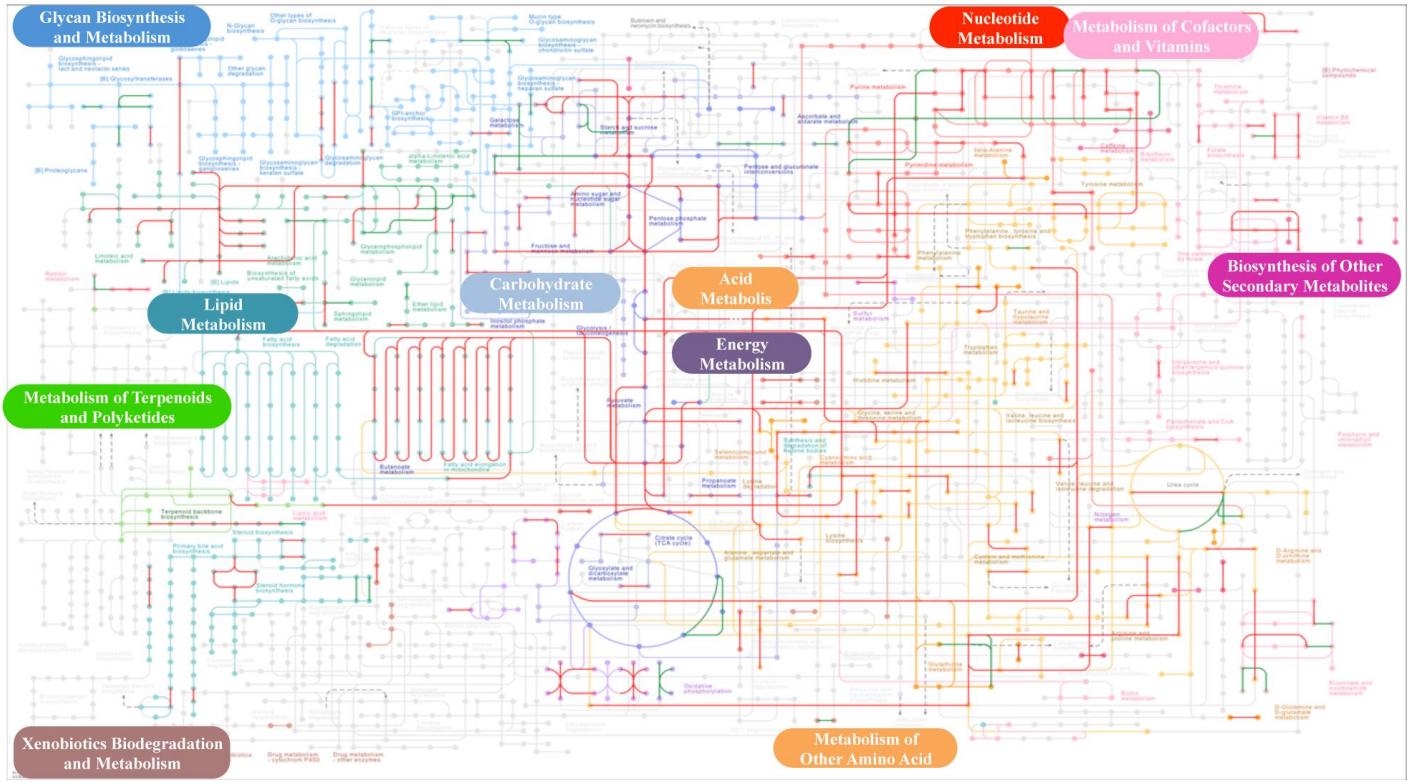
Gene expression profiling after NF-YA silencing in HCT116 cells

Fig.S4 Global Metabolic maps of genes deregulated after NF-YA, NF-YB, NF-YC and NF-Y (all subunits) inactivations in mouse embryonic stem cells.

Genes upregulated after NF-Y silencing Genes downregulated after NF-Y silencing

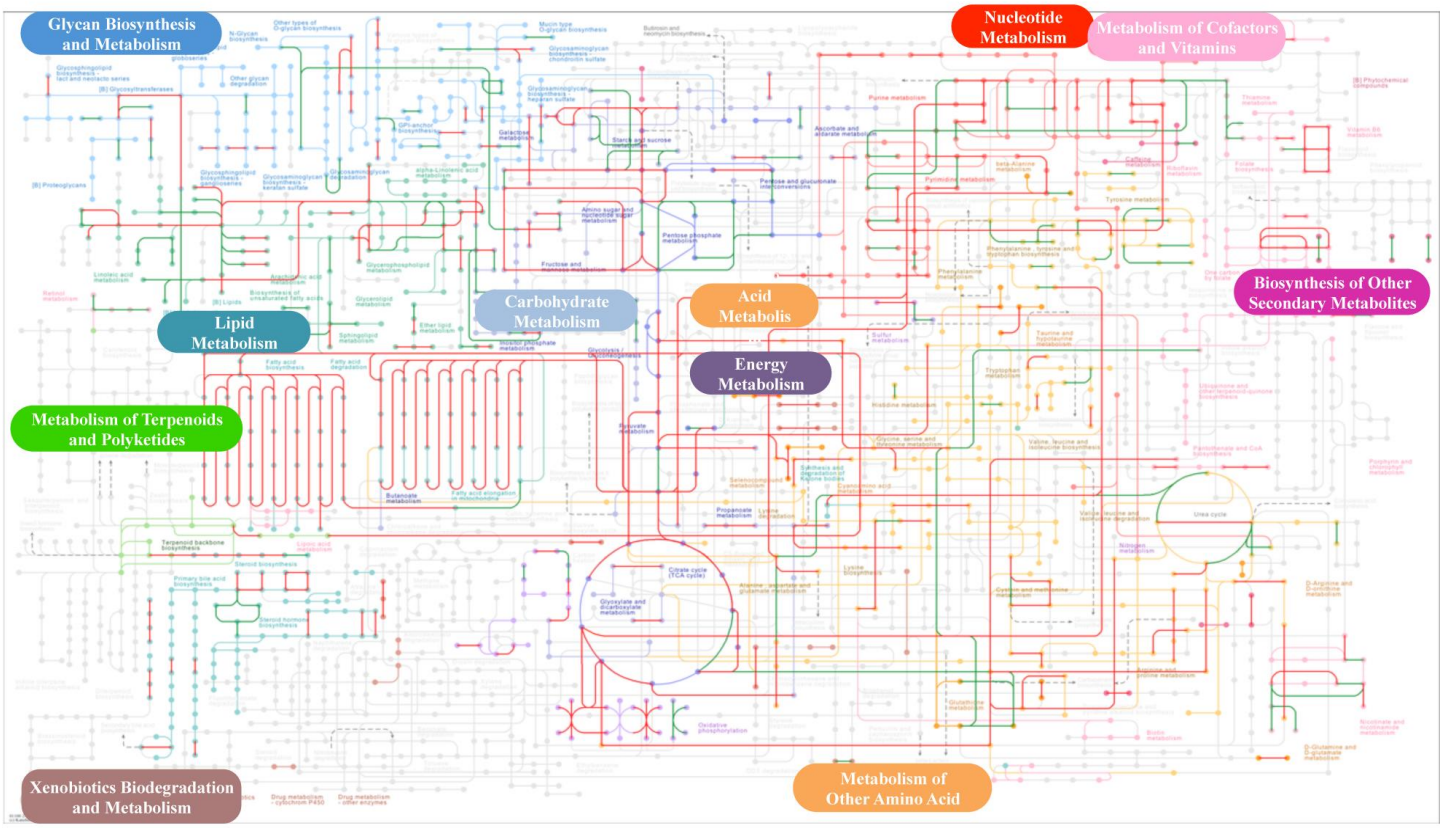


Gene expression profiling after NF-YA silencing in mES cells

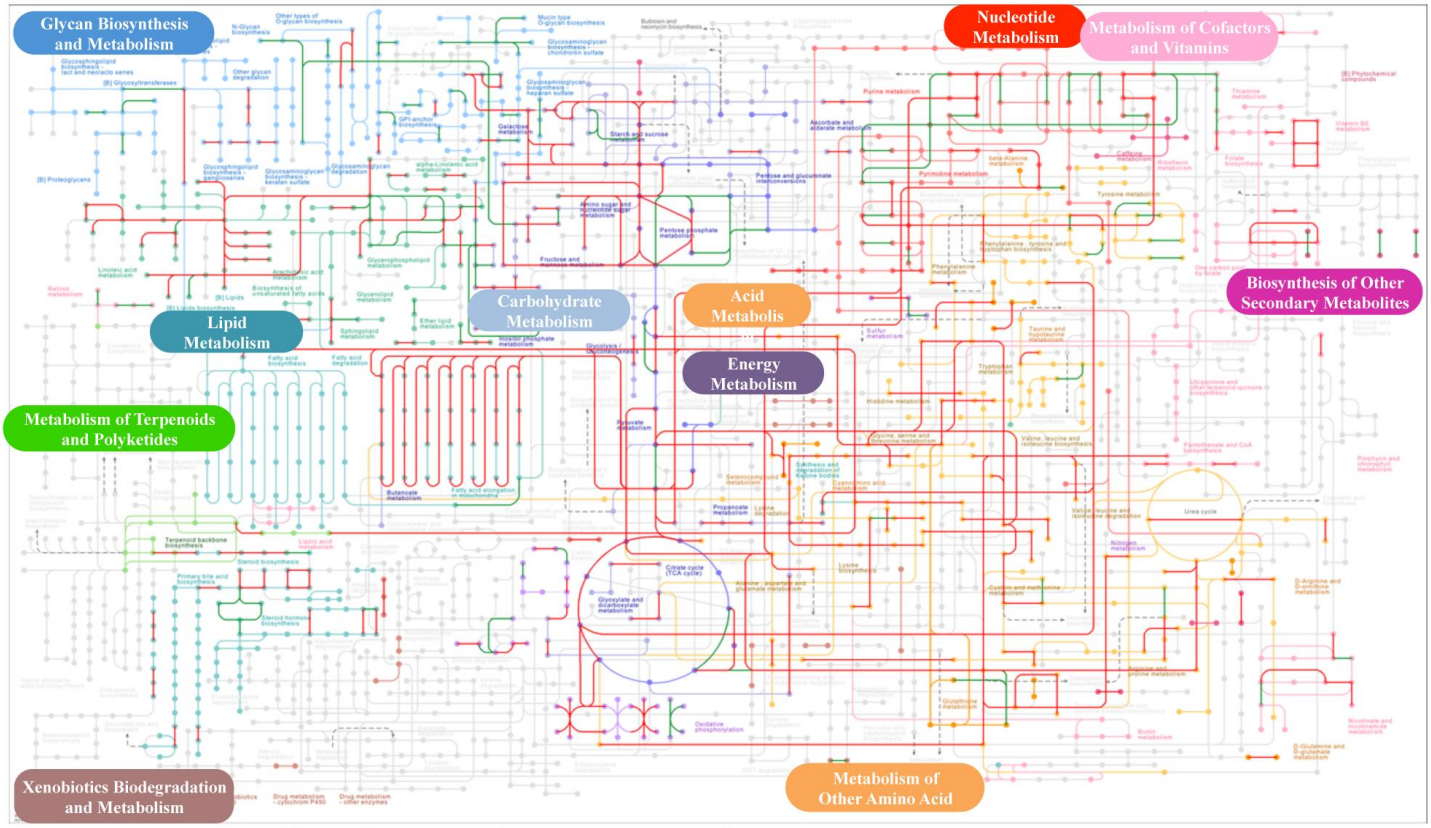


Gene expression profiling after NF-YB silencing in mES cells

Genes upregulated after NF-Y silencing Genes downregulated after NF-Y silencing

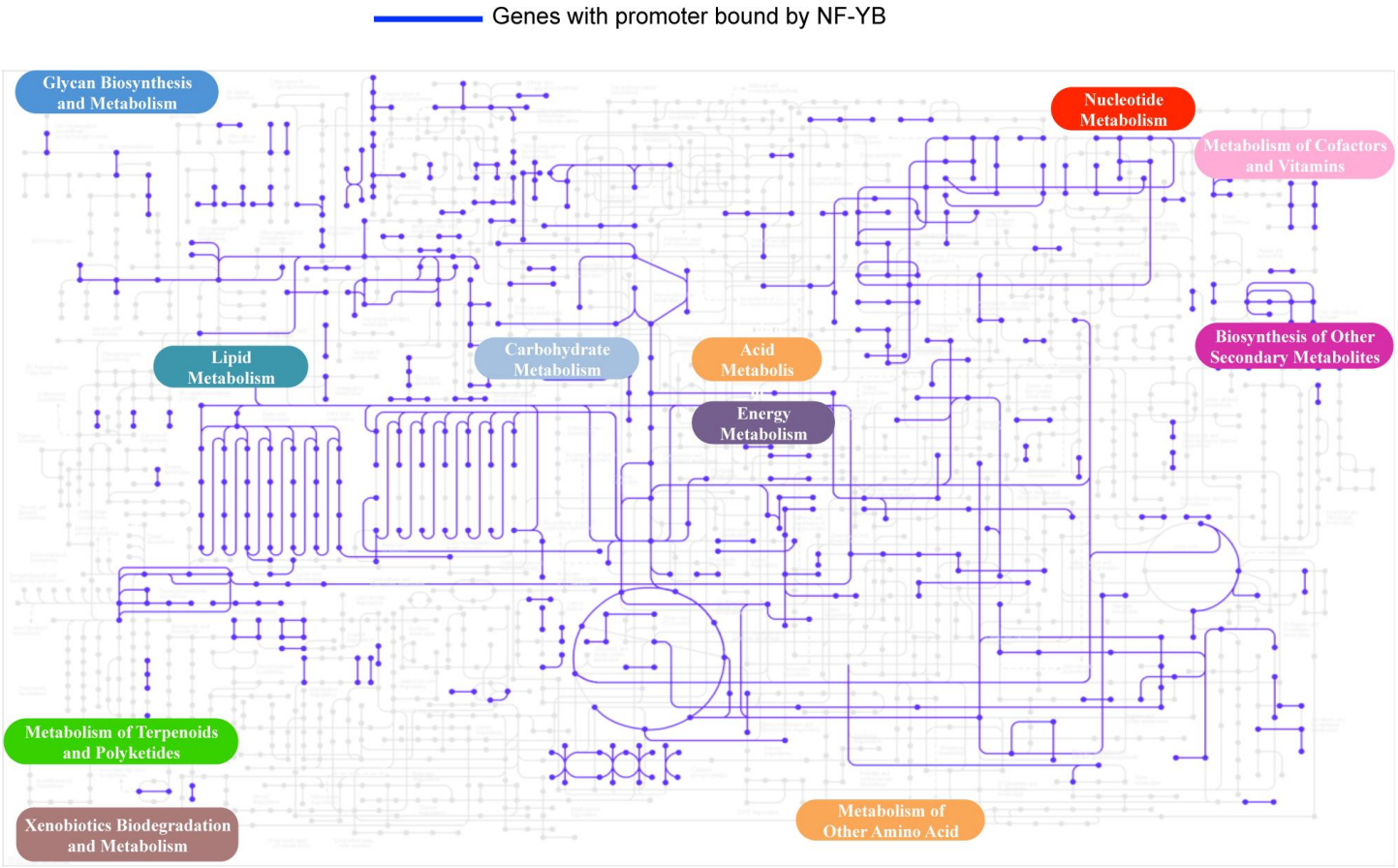


Gene expression profiling after NF-YC silencing in mES cells



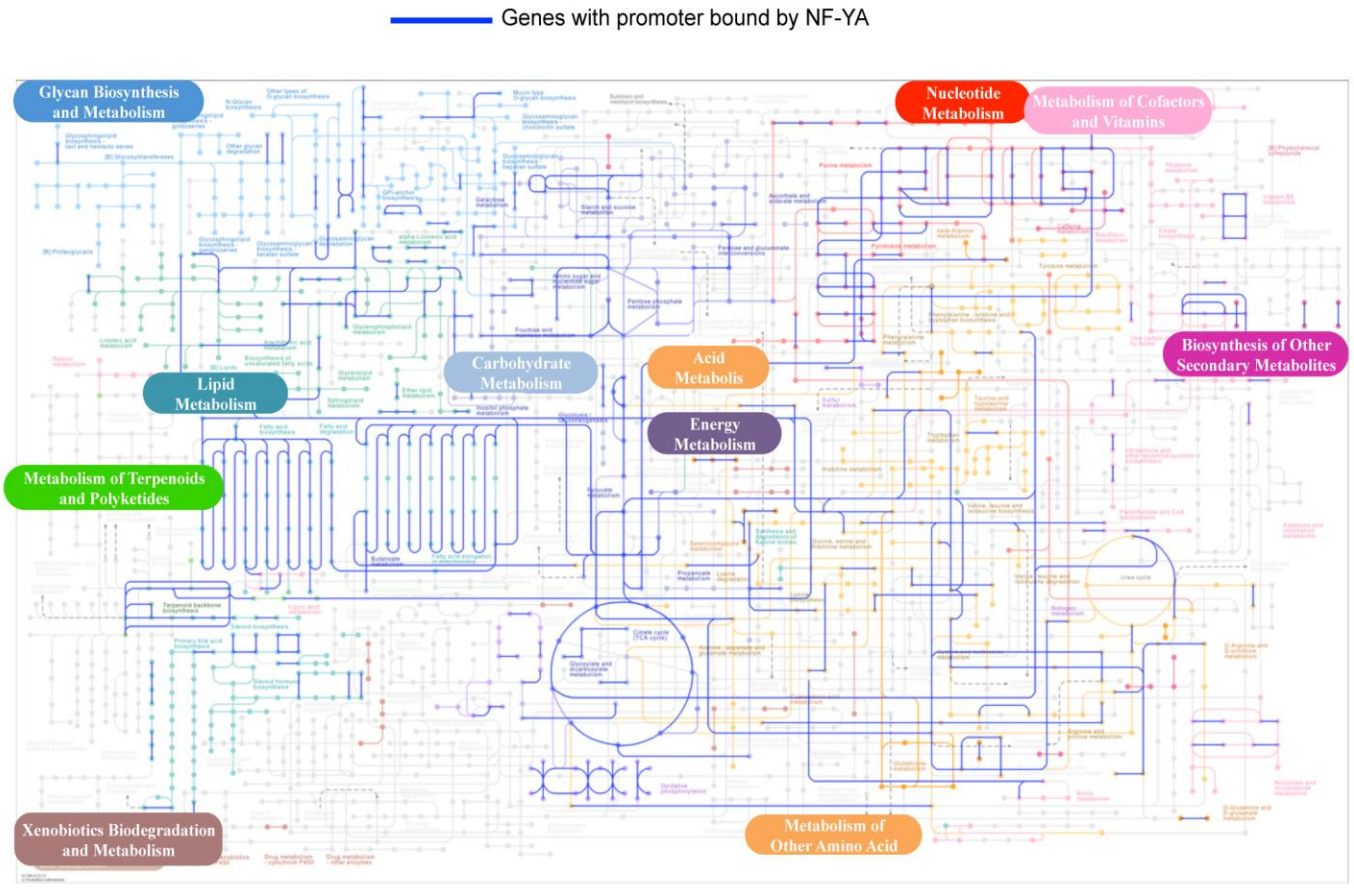
Gene expression profiling after NF-Y silencing in mES cells

Fig.S5 Global Metabolic maps of genes bound in their promoters by NF-YB according to ENCODE data in HeLa cells.

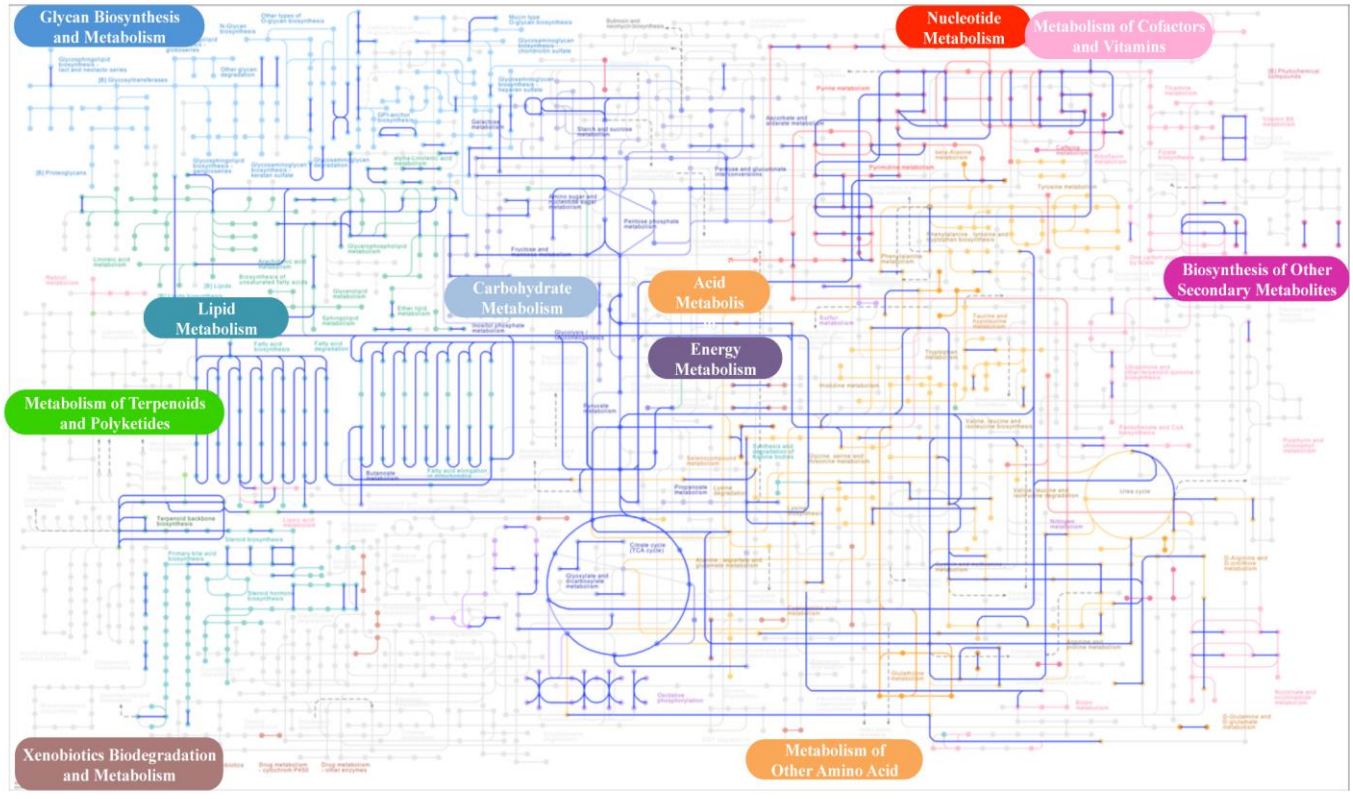


NF-YB binding in Hela cells

Fig.S6 Global Metabolic maps of genes bound in their promoters by NF-YA according to ENCODE data in K562 and GM12878 cells.



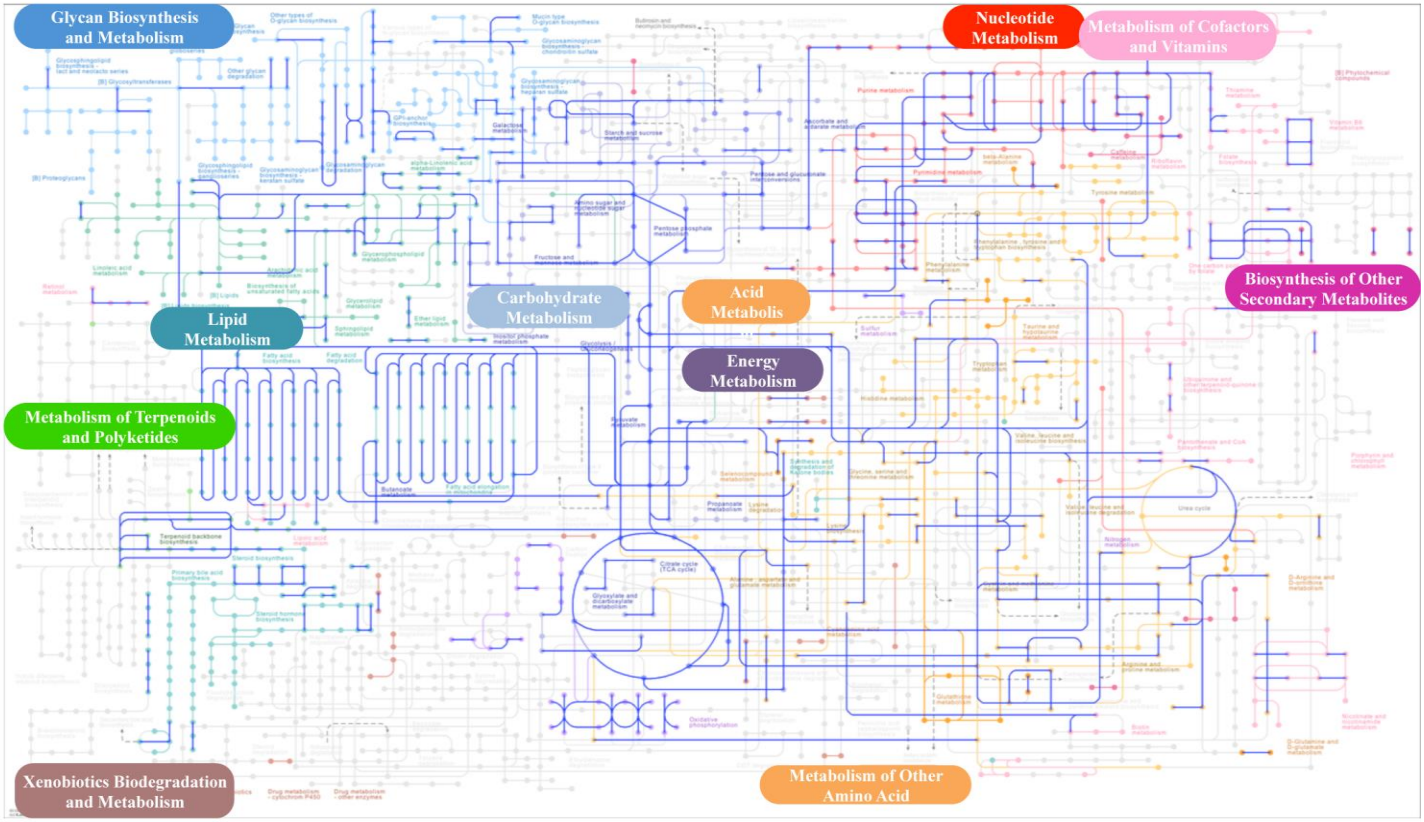
NF-YA binding in K562 cells



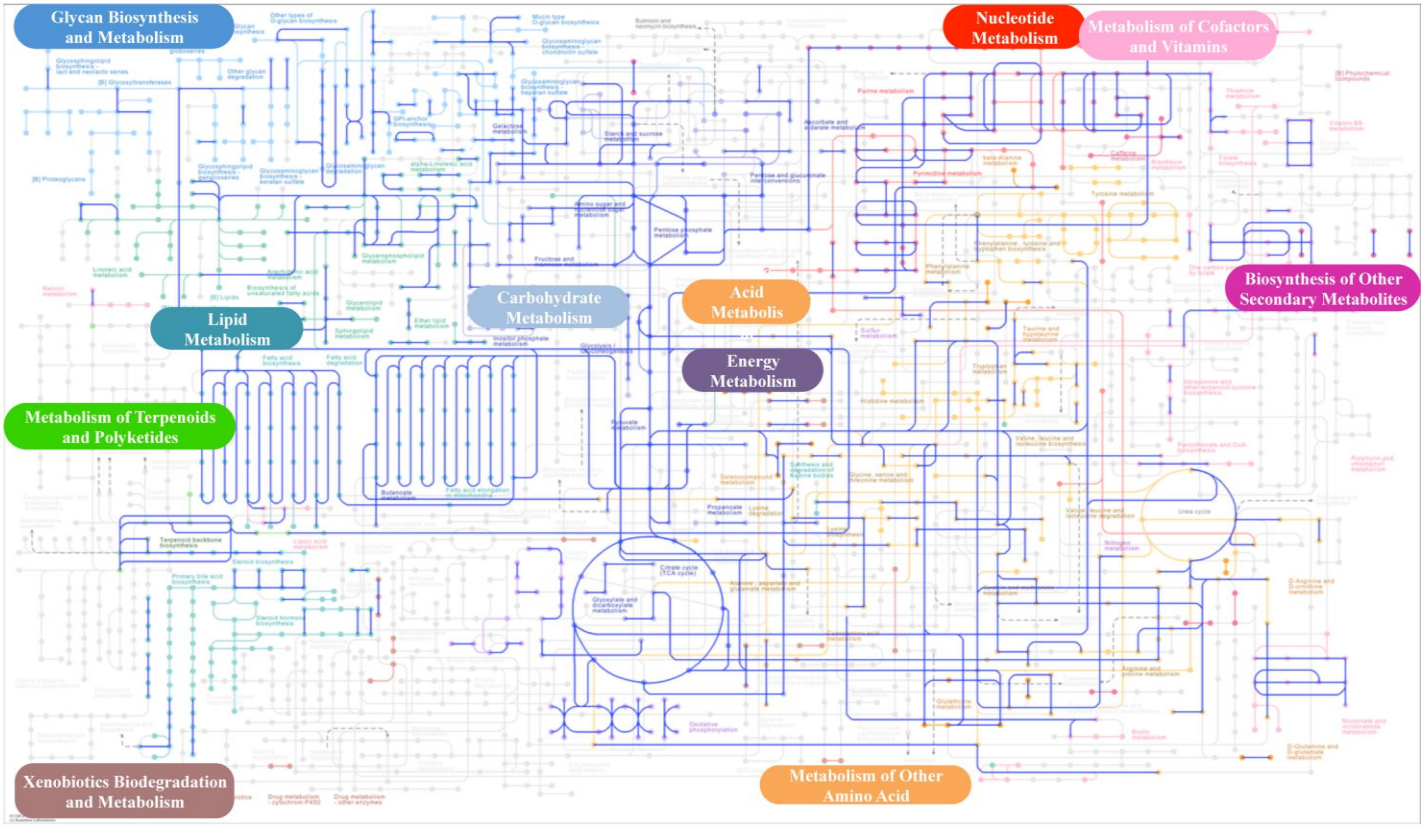
NF-YA binding in GM12878 cells

Fig.S7 Global Metabolic maps of genes bound in their promoters by NF-YB according to ENCODE data in K562 and GM12878 cells.

Genes with promoter bound by NF-YB

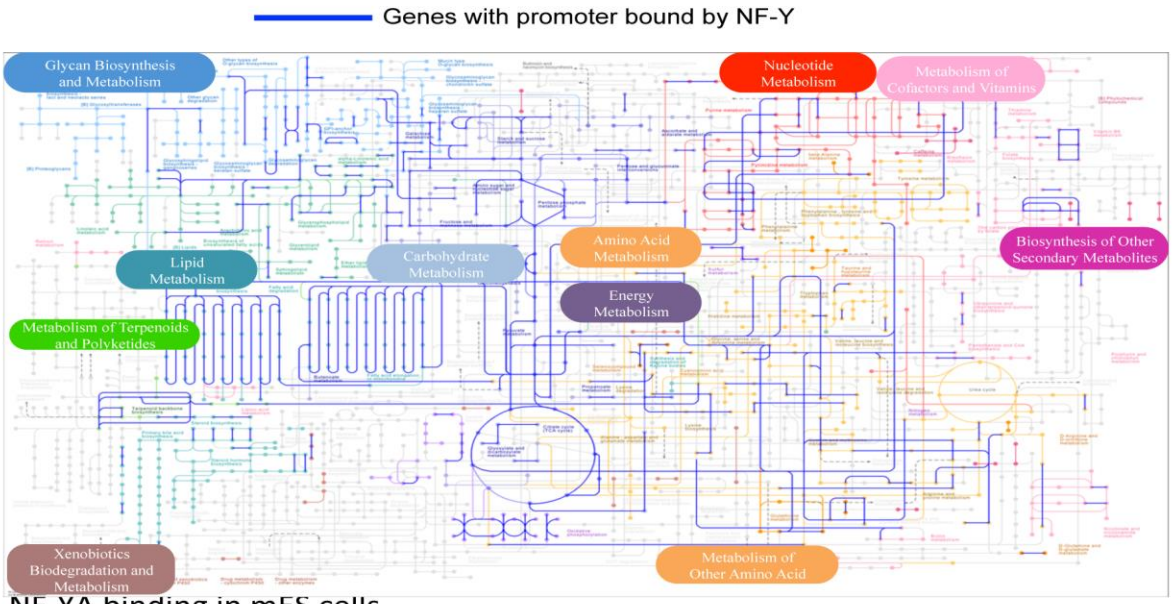


NF-YB binding in K562 cells

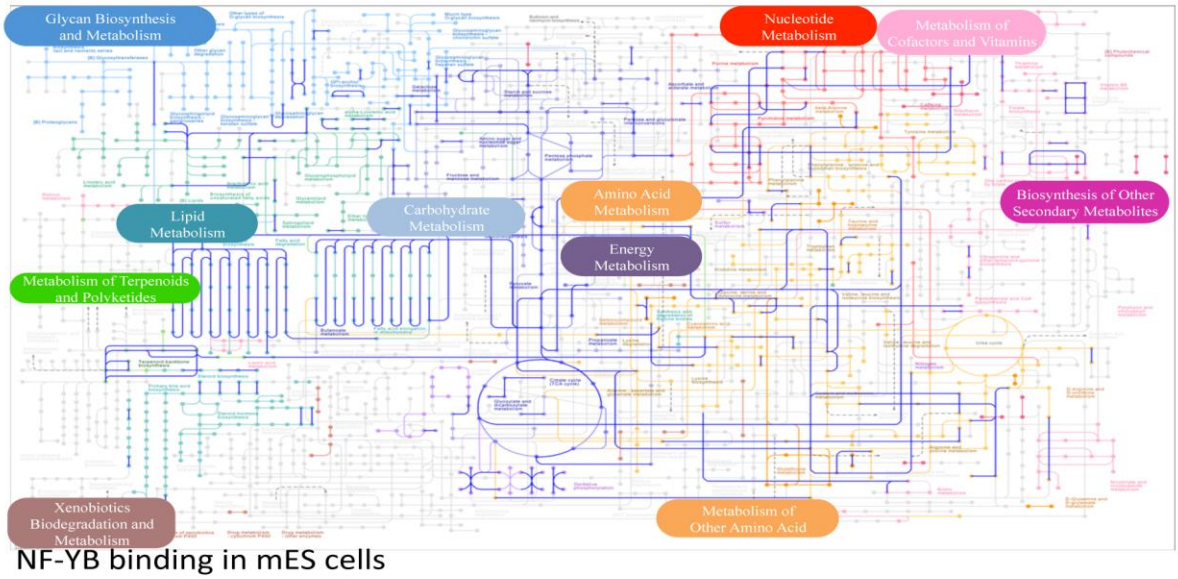


NF-YB binding in GM12878 cells

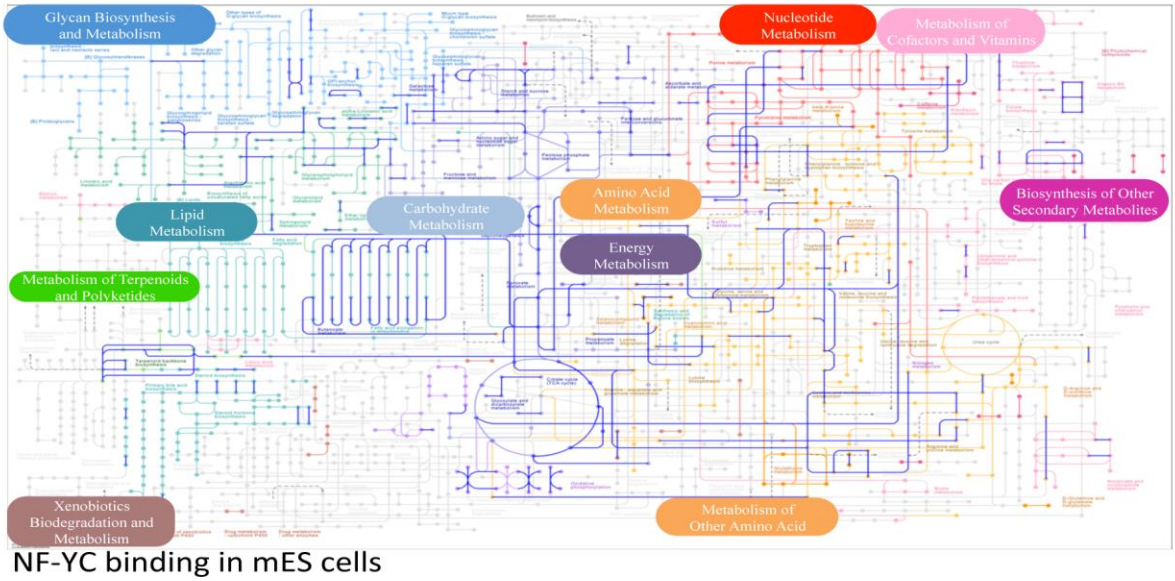
Fig.S8 Global Metabolic maps of genes bound in their promoters by NF-YA, NF-YB and NF-YC according to data published by Oldfield AJ et al..



NF-YA binding in mES cells

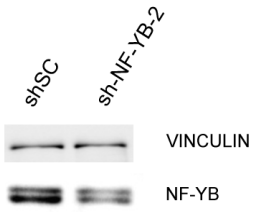


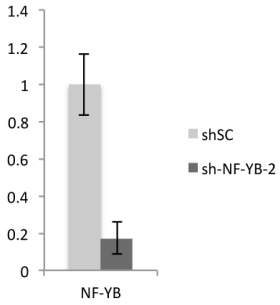
NF-YB binding in mES cells

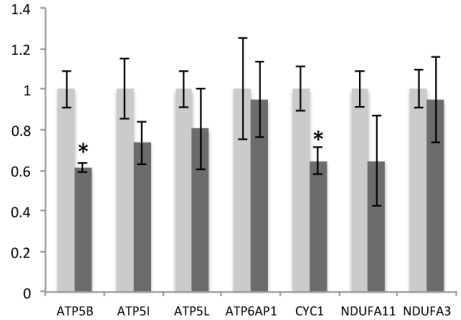


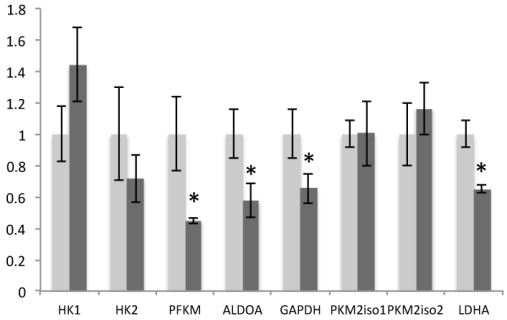
NF-YC binding in mES cells

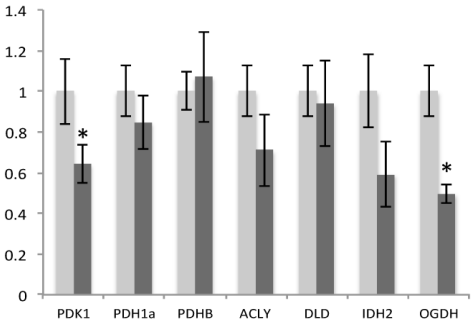
Fig.S11 Inactivation of NF-YB in Hela cells using sh-NF-YB-2 and analysis of expression of targets genes.

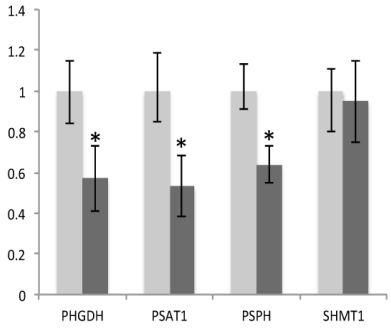


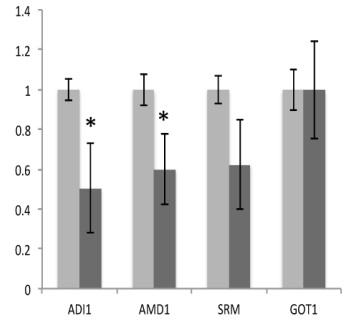








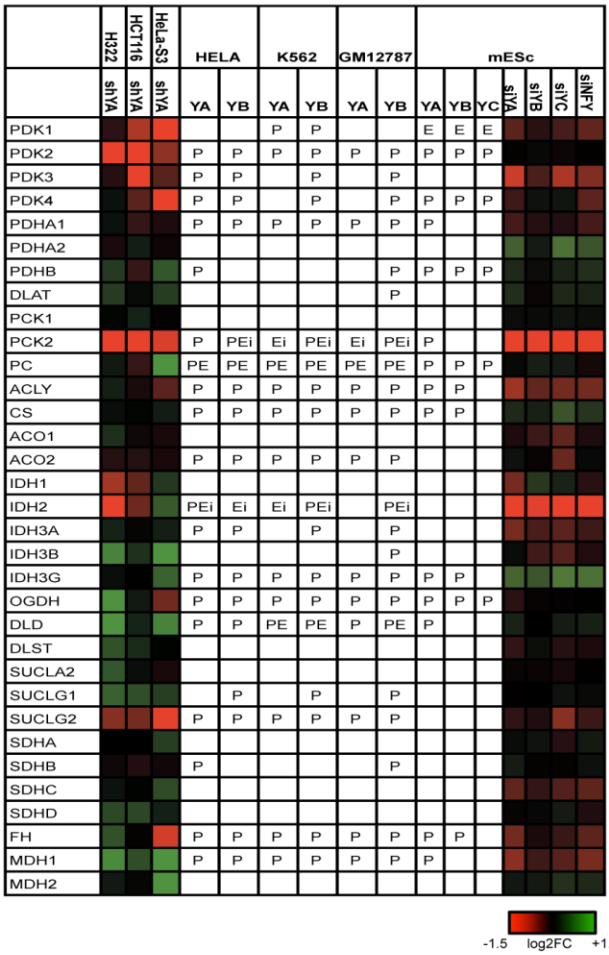




Western blot analysis of protein level of NF-YB in Hela cells inactivated of NF-YB using sh-NF-YB-2. qRT-PCR evaluation of expression levels of NF-YB and selected genes after inactivation of NF-YB in Hela cells. The average -/+ SD of three biological replicates is represented (*$p<0.05$).

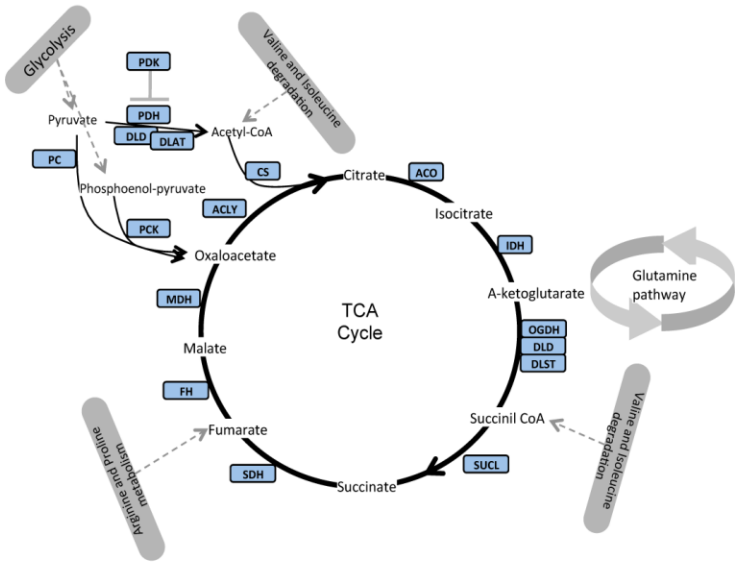
Fig.S12 Regulation of genes of TCA cycle.

A

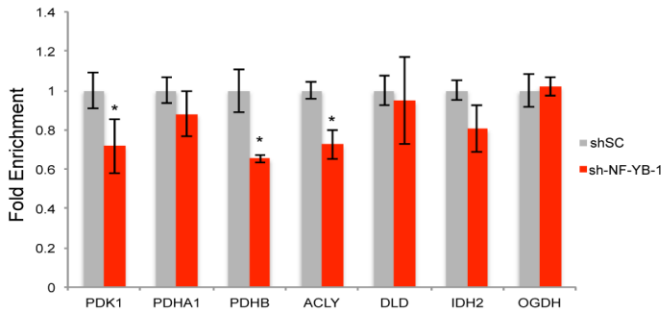


	H322	HCT116	HeLa-S3	HELA		K562		GM12787		mESc					
	shYA	shYA	shYA	YA	YB	YA	YB	YA	YB	YA	YB	YC	siYA	siYB	siYC	siNFY
PDK1						P	P			E	E	E				
PDK2				P	P	P	P	P	P	P	P	P				
PDK3				P	P		P		P							
PDK4				P	P		P		P	P	P	P				
PDHA1				P	P	P	P	P	P	P						
PDHA2																
PDHB				P					P	P	P	P				
DLAT									P							
PCK1																
PCK2				P	PEi	Ei	PEi	Ei	PEi	P						
PC				PE	PE	PE	PE	PE	PE	P	P	P				
ACLY				P	P	P	P	P	P	P	P					
CS				P	P	P	P	P	P	P	P					
ACO1																
ACO2				P	P	P	P	P	P							
IDH1																
IDH2				PEi	Ei	Ei	PEi		PEi							
IDH3A				P	P		P		P							
IDH3B									P							
IDH3G				P	P	P	P	P	P	P	P					
OGDH				P	P	P	P	P	P	P	P	P				
DLD				P	P	PE	PE	P	PE	P						
DLST																
SUCLA2																
SUCLG1					P		P		P							
SUCLG2				P	P	P	P	P	P							
SDHA																
SDHB				P					P							
SDHC																
SDHD																
FH				P	P	P	P	P	P	P	P					
MDH1				P	P	P	P	P	P	P						
MDH2																

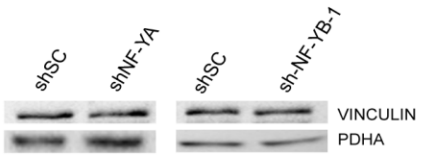
-1.5 log2FC +1.5



B

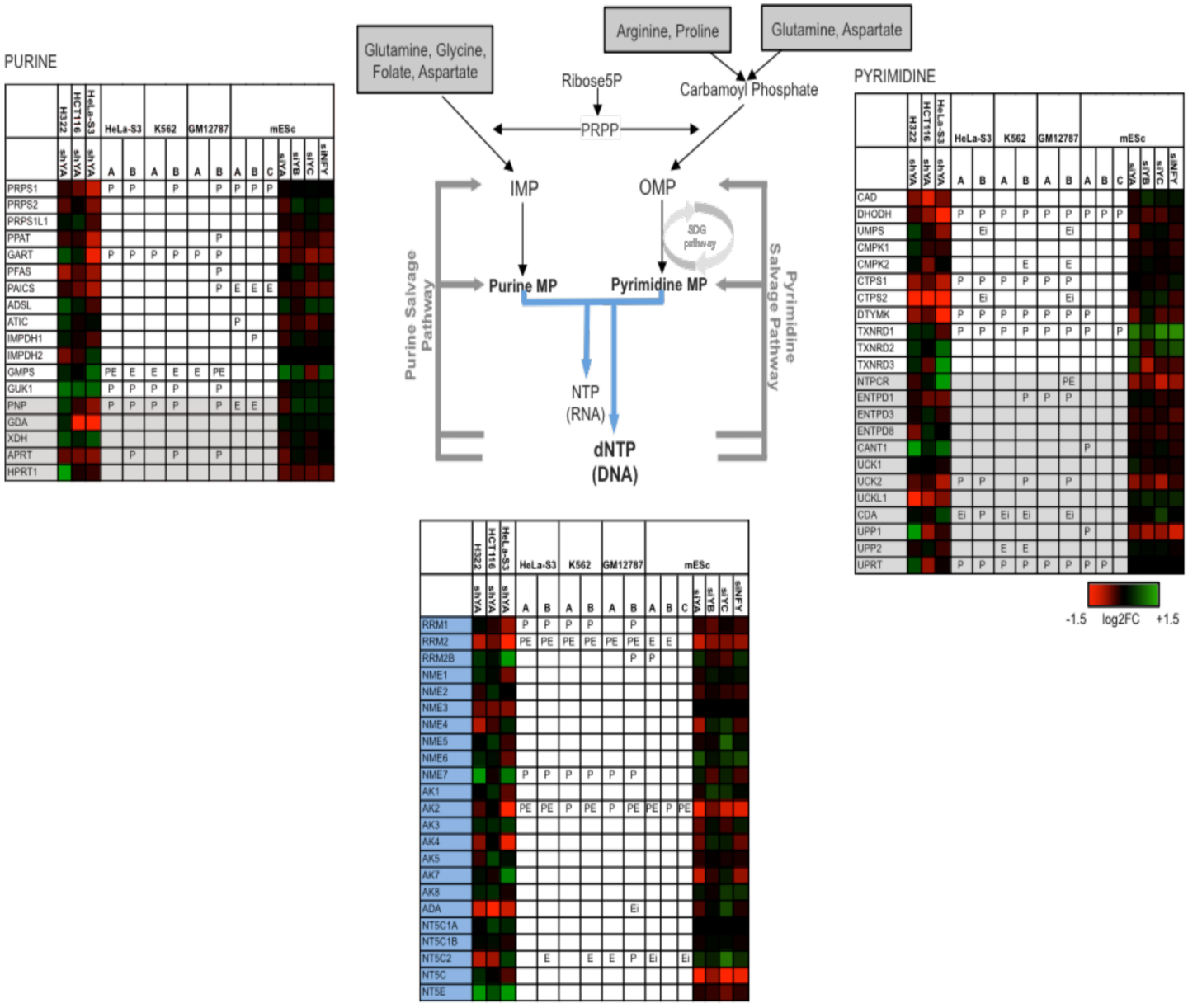


C



A) Expression levels of genes encoding TCA enzymes are shown after inactivation of NF-Y in different cell lines, and the presence of NF-Y binding is indicated as in Fig. 3. **B**) qRT-PCR validation of expression levels of selected genes after inactivation of NF-YB in Hela cells. The average -/+ SD of three biological replicates is represented (*p<0.05). **C**) Western blot analysis of protein levels of PDHA1 in Hela cells inactivated of NF-YA (Left panel) or NF-YB (Right panel).

FigS13 Activation of genes of purine and pyrimidine metabolisms by NF-Y.



Genes of the purine and pyrimidine metabolisms are shown with the expression levels after inactivation of NF-Y, and the presence of *in vivo* NF-Y binding.